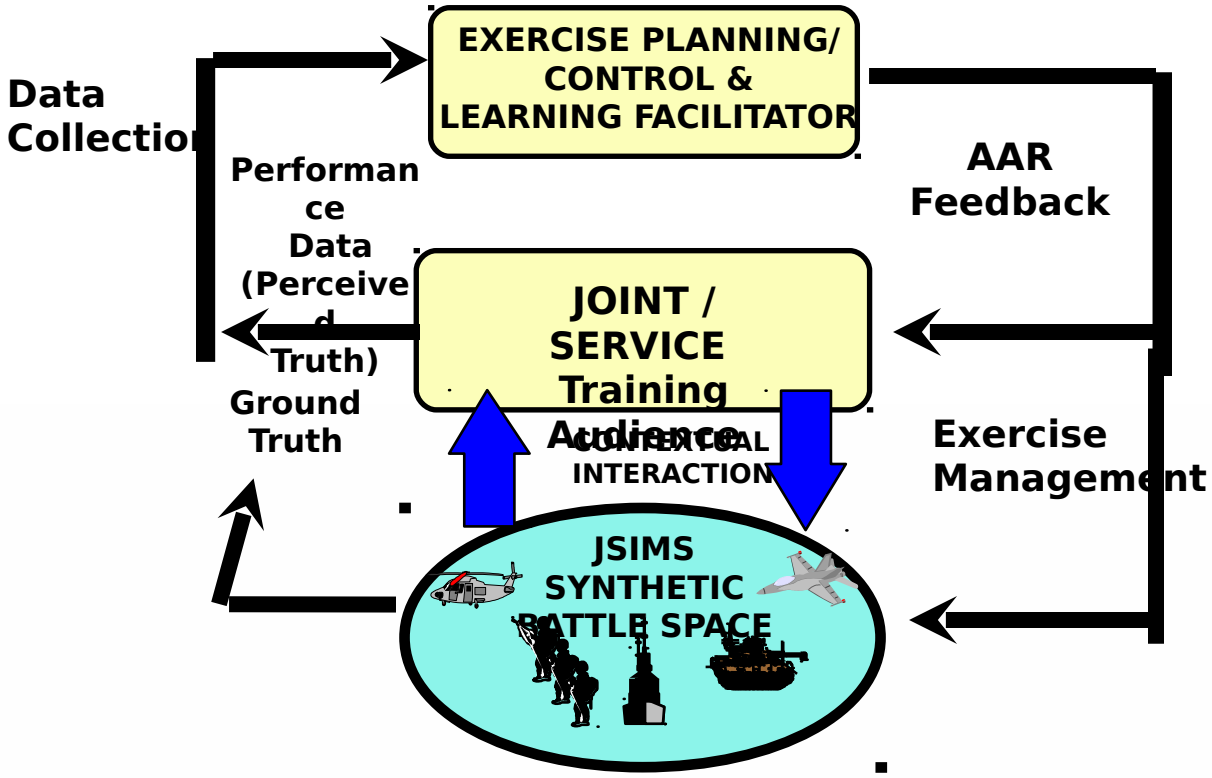
JSIMS Air & Space C4I Interface Recommendation Learning Methods Approach

A&S External Systems Interface Working Group

Sheila Cane (Mitre)
Bob Bolling (Mitre)
Bill Back (Mystech)
Dave Perme (WPL Labs)

Learning Methods Big Picture

Air & Space

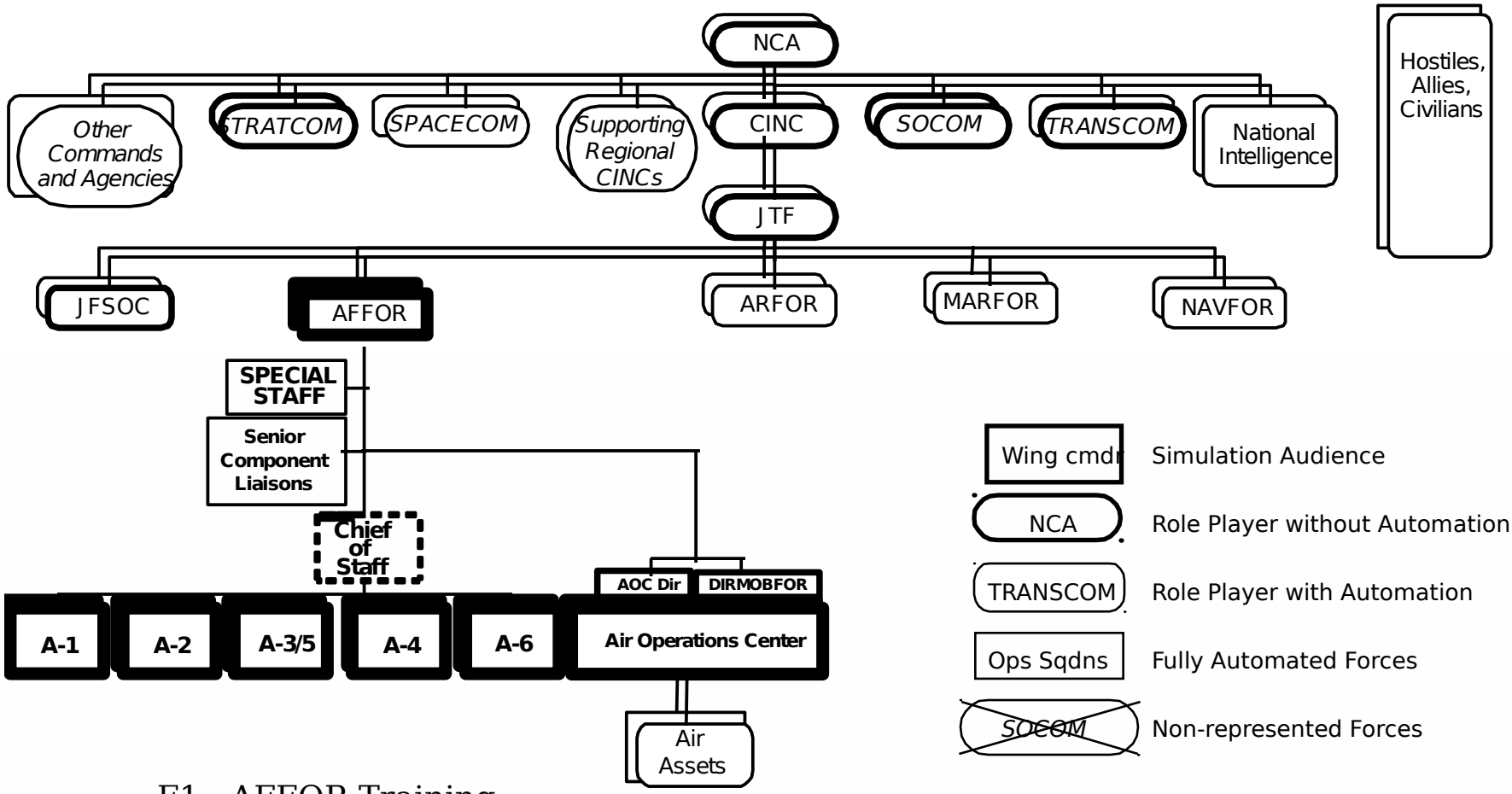


- **Focus on why we are building JSIMS**
- **Design, Architecture - Everything supports Training**
- **How can it help us in C4I interfaces?**

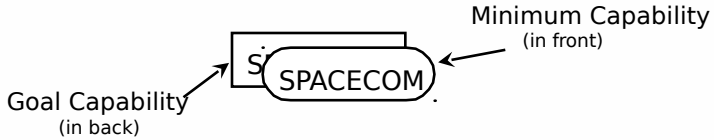
Source: LM Plan

Air&Space IOC Training Audience

Air & Space



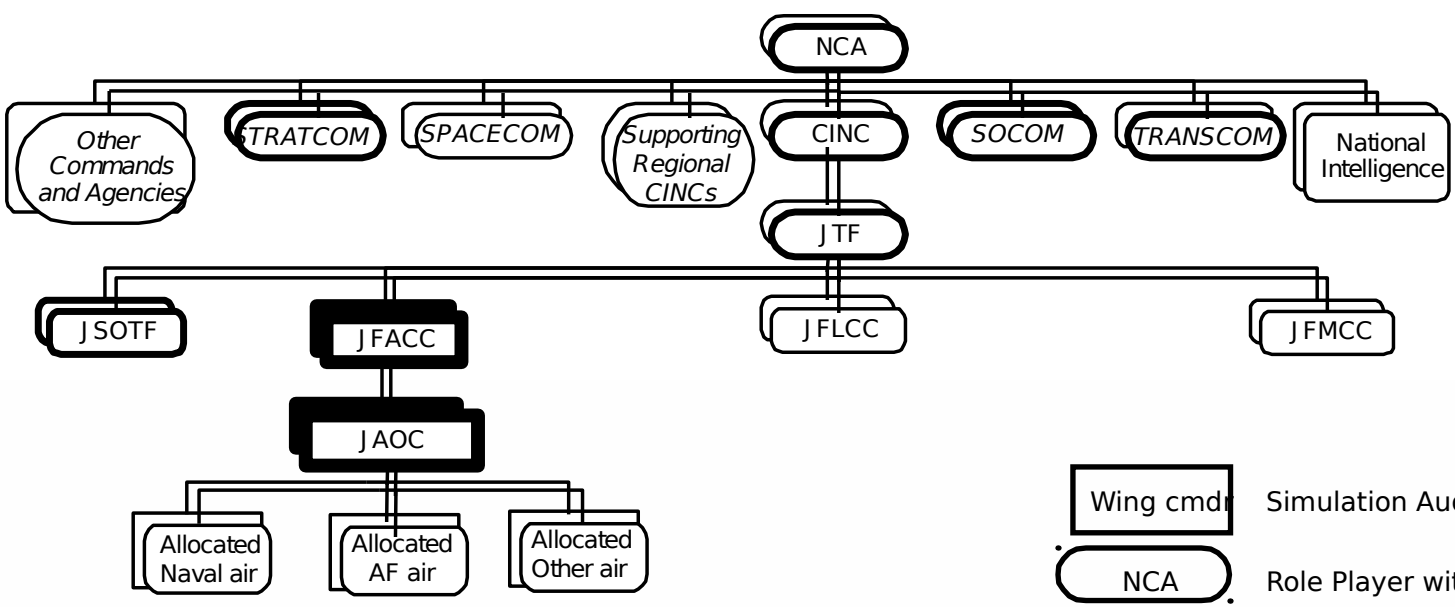
F1 - AFFOR Training



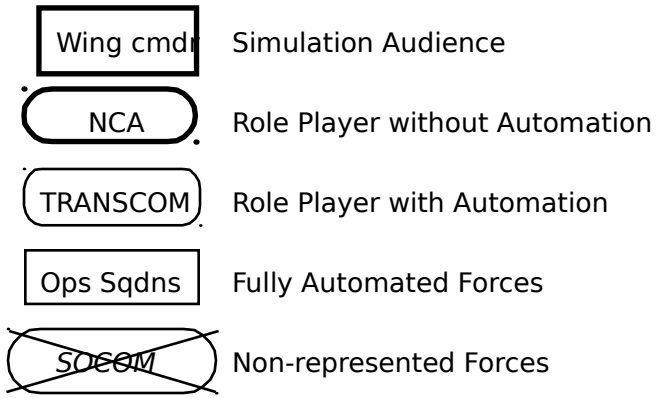
Source: JSIMS SSS

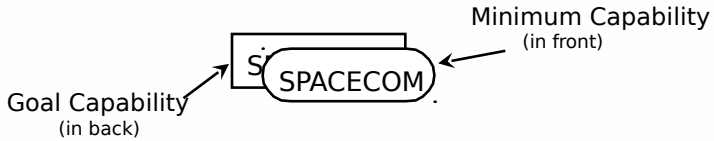
A&S IOC Training Audience (also)

Air & Space



F2 - JFACC and JAOC Training

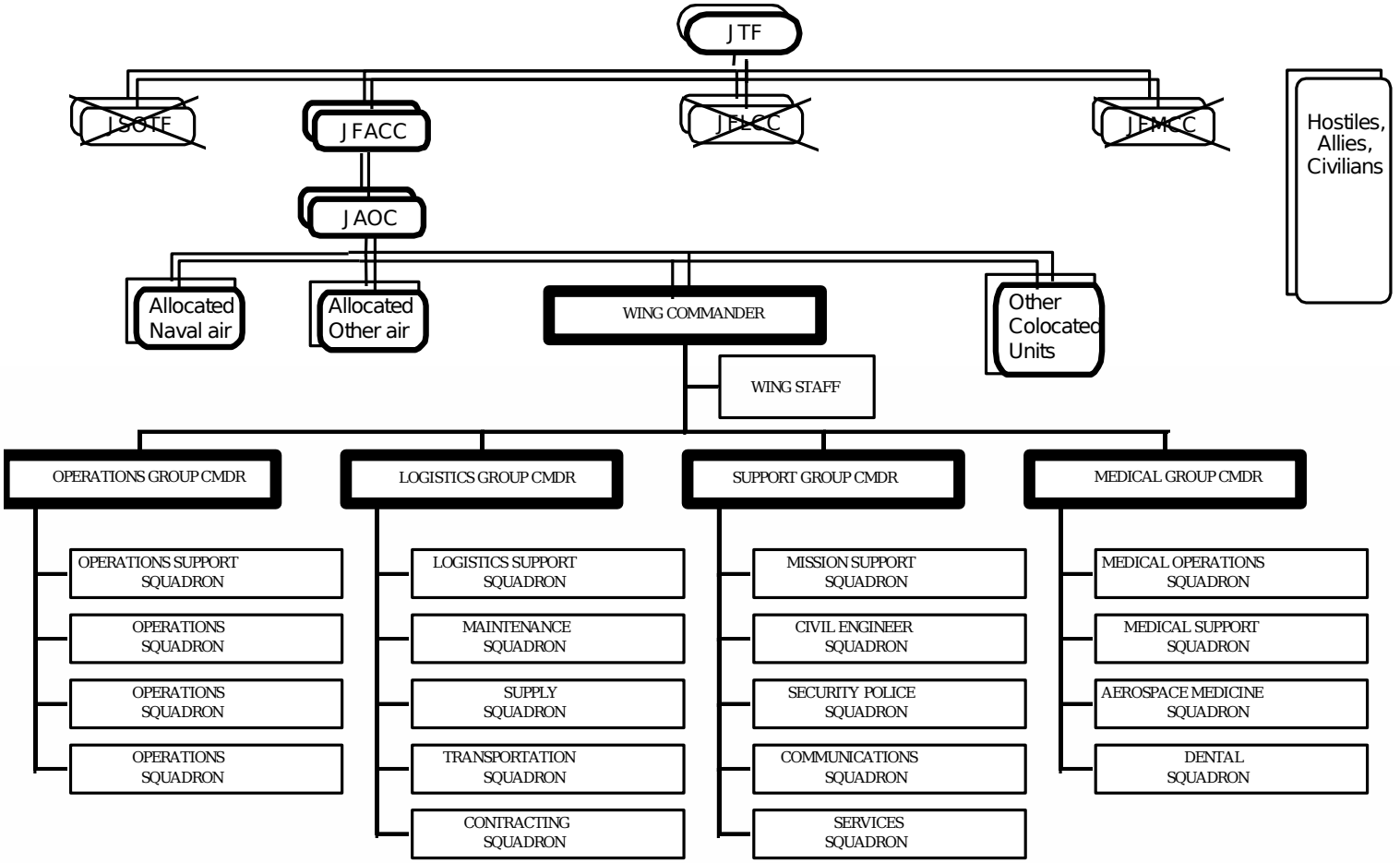




Source: JSIMS SSS

A&S FOC Training Audience

Air & Space

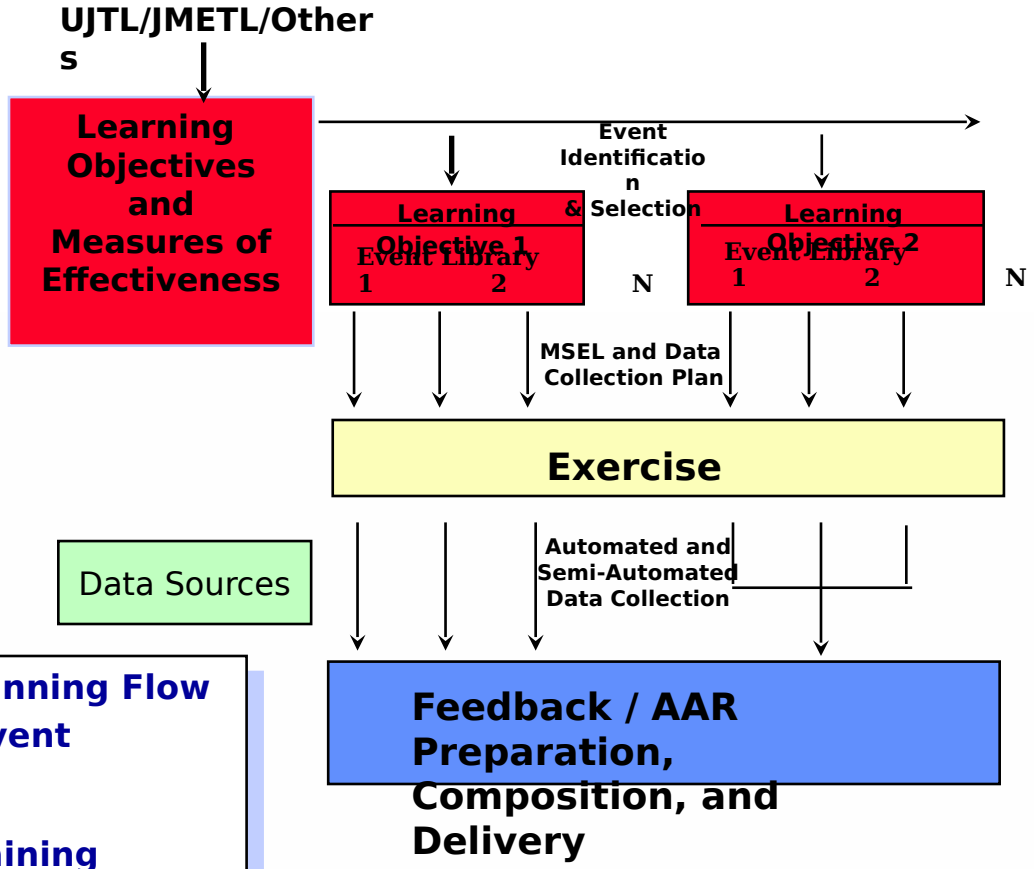


F3 - Wing Commander and Senior Staff Training (WOC)

Source: JSIMS SSS

Planning and Executing a Training Event

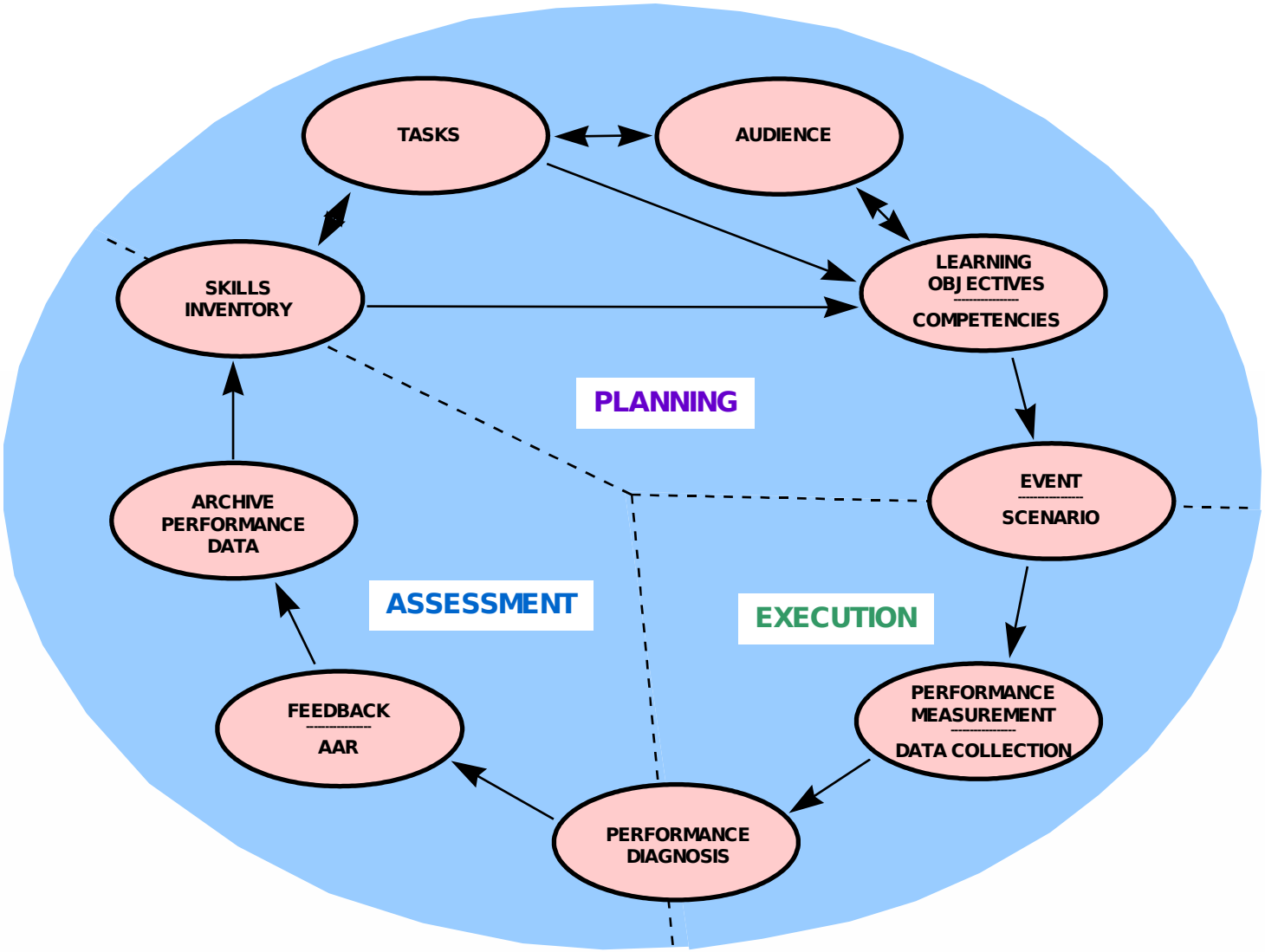
Air & Space



- Typical Exercise Planning Flow
- Red: Critical Pre Event Planning
- Training Requires Identification of Training Audience Tasks of Objectives

Learning Process

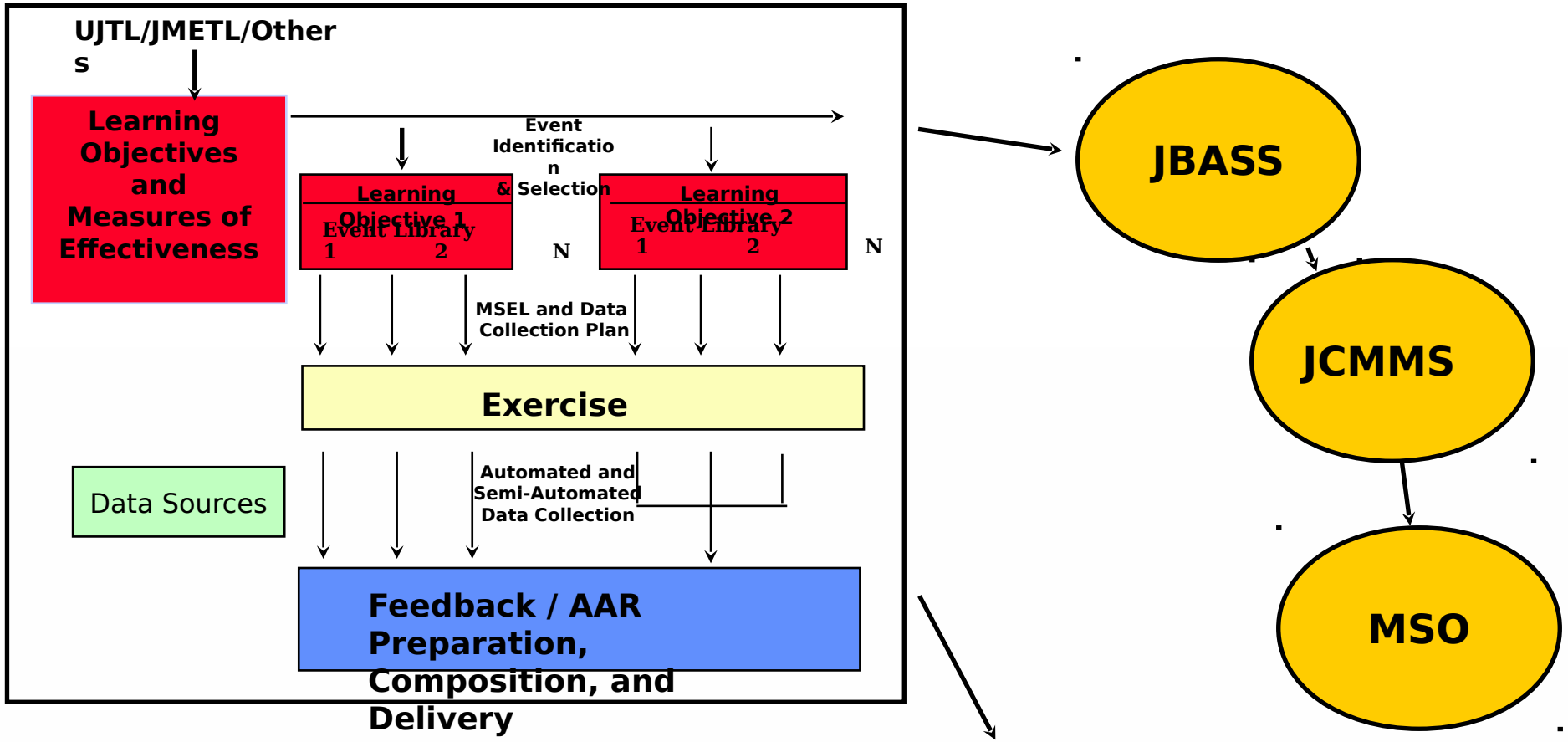
Air & Space



Source: LM Plan

LM Process Would Feed JSIMS Development Process

Air & Space

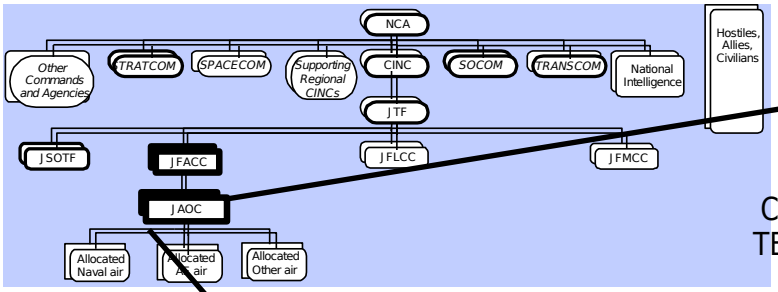


Core Infrastructure - Life Cycle Apps

Exercise Planning	Exercise Generation	Exercise Management	Data Collection Management	Data Collector	Le Analy

Example: F2 Training Audience: AOC

Air & Space



F2 Use Case (JSIMS IOC)

Example: Expand AOC Training Audience

DIRMOBFOR

AOC DIRECTOR

CORE TEAMS

STRATEGY DIVISION	COMBAT PLANS DIVISION	COMBAT OPERATIONS DIVISION	AIR MOBILITY CONTROL DIVISION
STRATEGY PLANS TEAM	MASTER AIR ATTACK PLAN TEAM	OFFENSIVE OPERATIONS TEAM	AIRLIFT CONTROL TEAM
			AERIAL REFUELING CONTROL TEAM
			AIR MOBILITY CONTROL TEAM
			AIR MOBILITY ELEMENT
OPERATIONAL ASSESSMENT TEAM	ATO/ ACO PRODUCTION TEAM	DEFENSIVE OPERATIONS TEAM	

SPECIALTY TEAMS

- LIAISONS (BCD, NALE, SOLE, etc.)
- INTELLIGENCE
- INTELLIGENCE, SURVEILLANCE, RECONNAISSANCE (ISR)
- AREA AIR DEFENSE
- INFORMATION WARFARE, SPECIAL TECHNICAL OPERATIONS
- SPACE
- AIRCRAFT SPECIALTIES AND UNIT REPRESENTATIVES
- AIRSPACE MANAGEMENT AND CONTROL
- LEGAL
- WEATHER
- LOGISTICS AND SUSTAINMENT

SUPPORT TEAMS

- COMBAT REPORTS
- INFORMATION MANAGEMENT
- INTEL UNIT SUPPORT
- SYSTEM ADMINISTRATION
- COMMUNICATIONS CENTER
- SUPPLY
- REQUEST FOR INFORMATION (RFI)

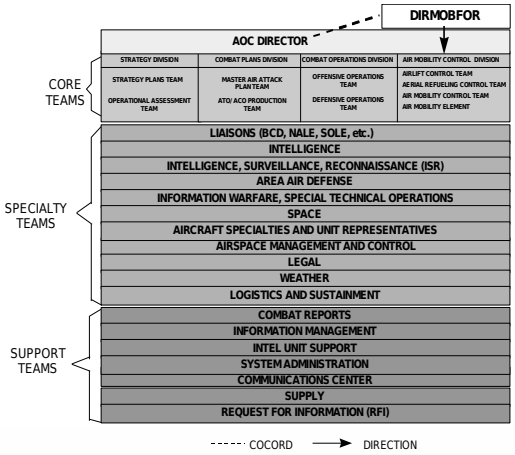
AOC Organization
w/ Specialty and Support Teams

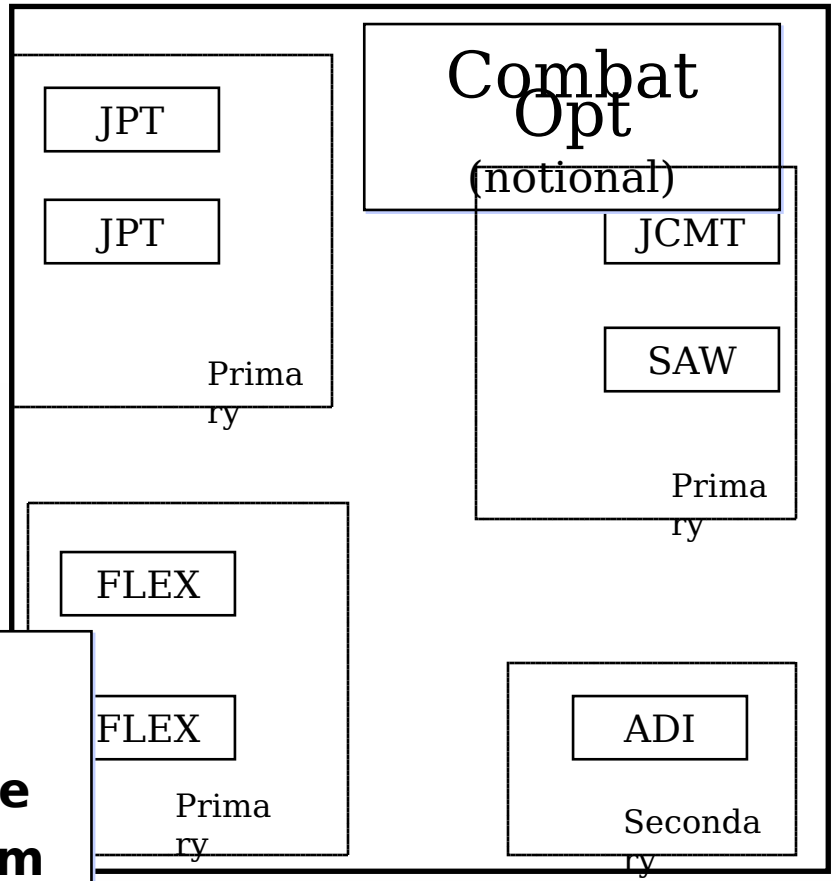
------ COCORD → DIRECTION

Source: USAF “little red

Expand Each Core & Specialty Teams

Air & Space





- **Identify: Primary, Secondary Training Audience members**
- **Identify: C4 Systems They Use**
- **List Tasks/Duties They Perform**
- **Information/Data They Need/Use**

Prioritize Systems/Data Flow

- **Based on Training Audience Needs**
  - **Primary Training Audience**
    - **Highest Priority**
    - **Needs highest fidelity**
    - **Preponderance of Effort**
  - **Secondary Training Audience**
    - **Can afford less then perfect fidelity**
    - **Focus on those areas they need for Primary training audience support**
- **Sequence C4I Requirements by JSIMS Version**
  - **Based on Training Audience (IOC - F1/F2, FOC - F3)**
  - **Migration/Delivery Schedules of C4 Systems**

CMMS Effort

- **Use Above as Filter**
- **Capture Legacy Data**
  - **ACI, Real Warrior, SimLink, etc**
- **Capture Real World (C2 Battle Lab, NAF, etc)**
- **Use Approved CMMS Formats**
- **Document Review**
  - **AFI 13-AOC (draft)**
  - **CMMS Development Document**
  - **AOC CBT's**
  - **USAF little red book**
  - **AOC Task and Skills Analysis (TASA)**

Status of Effort

- **JFACC and AOC Analysis approx. 75% complete**
  - **High confidence in initial recommendation**
  - **As analysis continues, will provide C4I Subsystems/information flow, Use Cases, and Scenarios**
- **Reviewed Enterprise plans for A&S requirements**
- **Determined a consolidated recommendation**

Notation and Assumptions

- **Interfaces are categorized by System and Protocol**
- **Interfaces are determined by training audience information flow vs. physical system hookup**
- **1.0 (JSIMS IOC) - JTF Strategy, Plans, Ops (Joint J3 FC)**
- **1.1 - JFACC/AFOR/AOC/USAF training version for BTS like training for Strategy, Combat Plans, Combat Ops (AF F1 &F2 FCs)**
- **1.2 - Log/Air Mobility/Strategic Airlift (Complete F1 and F2 for AOC)**
- **2.0 (FOC) - Wing Level, CRC/CRE/Other (AF Education/Seminar) (AF F3 FC)**

Notation and Assumptions (Cont.)

- **IOC = JSIMS IOC**
- **JPO and Other Enterprise partners indicates other than A&S responsible**
- **UFR = Unfunded Requirement**

Recommended JSIMS Interface Sequence for A&S Training Audience C4I Systems

- **JSIMS Versions1.0 and 1.1**
  - **Build functionality needed for J3 Functional Capability (FC) in Version 1.0**
  - **Add AF F1 and F2 FCs for AOC Strategy, Combat Plans, and Combat Ops in Version 1.1**
  - **Recommended Systems**
    - **TBMCS Force Level (not including CIS/TC4I)**
      - **Example Applications: APS, FLEX, SA, JPT**

Recommended JSIMS Interface Sequence for A&S Training Audience C4I Systems

- Recommended Systems (Cont.)
  - ADSI
    - Interfaced via TADILs
  - Consider TISD and JSAS
    - Used Operationally, also interfaced via TADIL, ADSI Comm Processor
- Recommended Protocols
  - TADIL A, B, & J
    - For Situational Awareness and Battle Management Feeds

Recommended JSIMS Interface Sequence for A&S Training Audience C4I Systems

- **JSIMS Version 1.2**
  - **Complete AF F1 and F2 FCs for AOC**
  - **Recommended Systems**
    - **Add Logistics, Air Mobility, Strategic Airlift, etc., to TBMCS interface**
    - **C2IPS**

Recommended JSIMS Interface Sequence for A&S Training Audience C4I Systems

- **JSIMS Version 2.0**
  - **Implement AF F3 FC**
  - **Wing Level, CRC/CRE/Other, AF Educational/Seminar**
  - **Recommended Systems**
    - **TBMCS Unit Level (WCCS)**
    - **GTACS**

Recommended JSIMS Interface Sequence for A&S Training Audience C4I Systems

- **Unfunded Requirements**
  - **Implement Version 1.2 or later**
    - **GDSS - concurrent with C2IPS**
  - **Add during Version 2 or later**
    - **AFMSS - Aircraft Mission Planning**
    - **GCSS - Logistics system, like GCCS**
    - **TBMCS Remote - Below Wing level**
      - **E.g., ASOC, CRC, CRE**
    - **CIC - May be used for TMD in AOC**

Assumed Partner DA Responsibilities

System	DA	A&S Req'd	I&D Planned
TC4I (TBMCS CIS)	JPO	1.1	1.0
GCCS	JPO	1.1 (COP)	1.0 (COP) Post 1.0 for other apps
GTN	JPO	N/A	1.0
JDISS	JPO, WIM, NATSIM	1.1	1.0 (may move out)
JEEPS	JPO	2.0	1.0 (may move out)

Assumed Partner DA Responsibilities

System	DA	A&S Req'd	I&D Planned
DCAPES	JPO	2.0	1.0 (may move out)
SOFPARS	WIM	2.0	1.2 (may move out)
CAMPS	JPO	2.0	2.0 (Not planned)
TEP	JPO	N/A	1.0 (may move out)

Assumed Partner DA Responsibilities

System/ Protocol	DA	A&S Req'd	I&D Planned
JSIPS	INTEL	N/A	Not Planned, Unfunded

Assumed Partner DA Responsibilities

Protocol	DA	A&S Req'd	I&D Planned
OTH-G	JPO, Maritime	N/A	1.0
TIBS	JPO	1.1	1.0
TRAP	NATSIM, JPO	1.1	1.0 (may move out)

Assumed Partner DA Responsibilities

Protocol	DA	A&S Req'd	I&D Planned
DMS	USMC, WIM, JSIGSIM	2.0	1.0 (may move out)
IBS	WIM, JPO	2.0	1.0 (may move out)

Systems Not Required to Support Training Audience

- **CARS**
  - **Not in current requirements**
  - **Does not appear in any Training Audience (TA) tasks yet surveyed**
- **GALE**
  - **Not in current requirements**
  - **Does not appear in any Training Audience (TA) tasks yet surveyed**

Systems Not Required to Support Training Audience

- **STOMPS**
  - **CTAPS Interface to AUTODIN migrating to STAMPS**
  - **DMS/AUTODIN Interface provided by USMC, JSIG, and WIM**
- **ADANS**
  - **Migrating to CAMPS**
  - **CAMPS to be provided by JPO**

Systems Not Required to Support Training Audience

- **RAOC/SAOC**
  - **Subordinate to Cheyenne Mountain Complex**
  - **Not included in FC training audience definition**
- **CMC**
  - **Not included in FC training audience definition**
- **CMARPS**
  - **Like ADANS, migrating to CAMPS**
  - **CAMPS to be provided by JPO**

Conclusion/Recommendation

- **Implement interfaces in the order suggested**
  - **Funding shortfalls may impact time/build, but not order**
- **Continue to support the application of Learning Methodologies Approach**
  - **Successfully used to identify Top-Level sequence of systems**
  - **Continue to further “drill down” requirements to provide Use Cases and Scenarios within the JSIMS development process**